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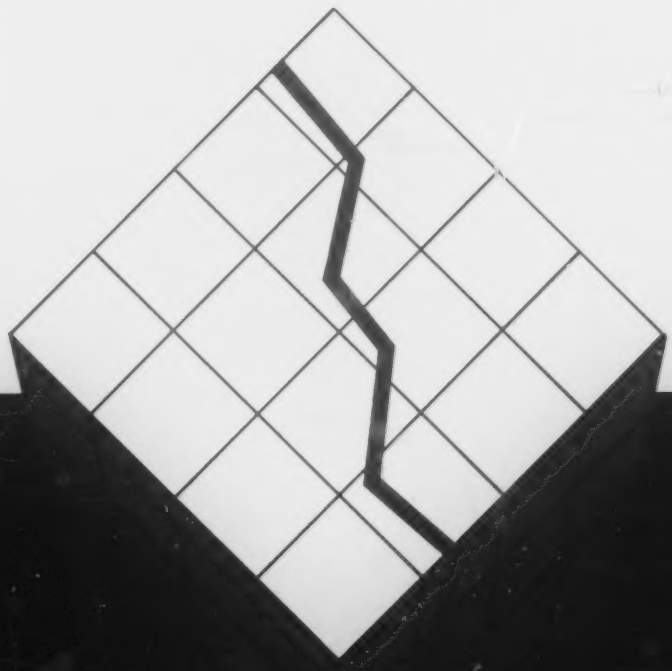

Sales of Natural Gas Liquids and Liquefied Refinery Gases

American Petroleum Institute

NPGA

GPA Gas Processors Association

1989 Sales of Natural Gas Liquids and Liquefied Refinery Gases

Finance, Accounting and
Statistics Department
September 1990

American
Petroleum
Institute

ORDER FROM:

Publications & Distribution
American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Printed in the United States of America

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Preface

The 1989 Sales of Natural Gas Liquids and Liquefied Refinery Gases marks the publication of the sixth survey jointly sponsored by the American Petroleum Institute (API), the Gas Processors Association (GPA), and the National PROPANE GAS Association (NPGA).

Sales of natural gas liquids and liquefied refinery gases totalled 35.1 billion gallons in 1989. A reduction of 0.3 percent or 120.8 million gallons from the 1988 volumetric level. By product only, propane showed an increase rising 7.2 percent. Ethane, butane, and pentanes plus registered decreases of 10.4, 2.4, and 2.6 percents respectively.

According to survey data, industrial usage rose 16.6 percent, residential and commercial usage increased 10.1 percent, farm use was up 8.7 percent, and other uses expanded 57.4 percent. The other three sectors gas utility, chemical and internal-combustion declined 15.7, 8.7, and 3.5 percents respectively.

NGLs, butanes and pentanes plus, used in motor gasoline blending showed a decline of 4.9 percent. This reduction is due primarily to the reduction in volatility standards put into effect during the year.

The following table illustrates the percentage distribution of total sales by sector for both 1989 and 1988.

Sector	1989 %	1988 %
Residental & Commercial	19.3	17.5
Internal-Combustion Fuel	2.0	2.0
Chemical	37.2	40.6
Industrial	6.6	5.7
Gas Utility	0.8	0.9
Farm	4.4	4.1
Other	4.5	2.8
Gasoline Blending	25.2	26.4
Total	100.0	100.0

The ten states which had the largest volumes of sales are ranked below. Their sales came to 27.3 billion gallons or 77.9 percent of the total national volume.

Rank	State	Volume (M/gals)	% of Total
1.	Texas	15,959,917	45.5
2.	Louisiana	3,770,934	10.7
3.	Kansas	1,713,154	4.9
4.	California	1,344,276	3.8
5.	Illinois	1,054,458	3.0
6.	Michigan	1,022,392	2.9
7.	Ohio	797,592	2.3
8.	Mississippi	609,523	1.7
9.	Indiana	580,708	1.7
10.	Missouri	473,720	1.4
	Total	27,326,674	77.9

Washington, D.C.
September 1990

TABLE 1. Sales of Natural Gas Liquids and Liquefied Refinery Gases in the United States, 1989 and 1988 (Thousands of Gallons)

Category	1989	1988	VOLUME CHANGE	% CHANGE
Product Type:				
Ethane 1/.....	7,198,422	8,030,862	-832,440	-10.4
Propane 2/.....	15,343,608	14,315,784	1,027,824	7.2
Butane 3/.....	7,859,712	8,050,140	-190,428	-2.4
Pentanes Plus 4/.....	4,682,286	4,808,034	-125,748	-2.6
United States Total	35,084,028	35,204,820	-120,792	-0.3
Principal Uses:				
Residential & Commercial	6,771,552	6,148,583	622,969	10.1
Internal-Combustion Fuel	689,629	714,778	-25,149	-3.5
Chemical/Industrial:				
Chemical 5/6/.....	13,053,472	14,295,406	-1,241,934	-8.7
Industrial 7/.....	2,327,495	1,996,549	330,946	16.6
Gas Utility	283,358	335,946	-52,588	-15.7
Farm	1,556,210	1,431,176	125,034	8.7
Other 8/.....	1,570,955	997,882	573,073	57.4
Gasoline Blending	8,831,357	9,284,500	-453,143	-4.9
United States Total	35,084,028	35,204,820	-120,792	-0.3

1/ Includes ethylene.
2/ Includes propylene.
3/ Includes isobutane and butylene.
4/ Includes isopentane, natural gasoline and plant condensate. Excludes field condensate.
5/ Includes use in synthetic rubber manufacture.
6/ The reported data strongly suggest that this category includes not only ethane, propane, butane and pentanes plus consumed as chemical feedstocks, but some refinery olefins and chemical plant fuel usage.
7/ Includes refinery fuel use.
8/ Includes use as synthetic natural gas feedstock and use in secondary recovery projects.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

Table 2. Sales of Natural Gas Liquids and Liquefied Refinery Gases by Product Type, PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Ethane		Propane		Butane	
	1989	1988	1989	1988	1989	1988
PAD Dist. I						
New England						
Connecticut...	-	-	67,990	64,007	W	W
Maine.....	-	-	67,986	68,253	-	-
Massachusetts.	-	-	111,143	100,425	W	W
New Hampshire.	-	-	109,589	90,831	-	-
Rhode Island..	-	-	21,066	23,191	W	W
Vermont.....	-	-	66,693	50,353	-	-
Central Atlantic						
Delaware.....	-	-	42,197	39,764	W	W
Maryland/D.C..	-	-	93,905	72,872	W	W
New Jersey....	-	-	200,620	219,807	23,640	69,414
New York.....	-	-	245,670	226,584	W	W
Pennsylvania..	-	-	267,543	242,454	56,601	120,442
Lower Atlantic						
Florida.....	W	W	351,242	344,908	W	W
Georgia.....	-	-	326,016	290,461	W	W
North Carolina	-	-	413,599	340,757	W	W
South Carolina	-	-	161,926	152,569	W	W
Virginia.....	-	-	198,038	184,333	W	764
West Virginia.	W	-	52,810	44,375	-	-
Total.....	3,631	347	2,798,033	2,555,944	89,914	206,930
PAD Dist. II						
Illinois.....	157,739	1,267,364	434,612	587,673	401,398	508,107
Indiana.....	W	-	454,910	403,502	53,335	81,163
Iowa.....	-	-	429,199	423,040	W	W
Kansas.....	309,637	283,749	373,879	323,433	436,833	631,114
Kentucky.....	W	W	326,821	314,803	44,275	85,443
Michigan.....	W	W	807,408	772,611	129,328	157,563
Minnesota.....	W	-	344,880	342,259	W	W
Missouri.....	-	-	472,073	409,478	W	1,292
Nebraska.....	W	-	215,249	225,479	W	W
North Dakota..	W	-	103,522	92,014	13,761	28,821
Ohio.....	W	-	617,026	575,162	179,166	82,621
Oklahoma.....	W	2,115	202,011	194,734	119,712	172,224
South Dakota..	-	-	217,858	101,005	-	-
Tennessee.....	-	-	198,084	186,294	W	W
Wisconsin.....	-	-	409,272	373,918	W	W
Total.....	641,255	1,646,698	5,606,804	5,325,405	1,397,161	1,769,754
PAD Dist. III						
Alabama.....	W	W	259,123	203,424	7,730	7,868
Arkansas.....	W	-	196,926	163,173	1,049	2,443
Louisiana.....	829,041	977,100	617,416	543,635	1,538,007	1,766,051
Mississippi...	W	-	242,841	168,304	46,064	62,486
New Mexico....	W	W	105,372	67,244	41,127	17,704
Texas.....	5,494,680	5,365,424	4,149,696	4,028,372	3,784,597	3,297,522
Total.....	6,485,914	6,342,970	5,571,374	5,174,152	5,418,574	5,154,074
PAD Dist. IV						
Colorado.....	W	-	111,769	103,895	15,511	12,442
Idaho.....	-	-	33,932	30,680	-	W
Montana.....	-	-	64,624	52,898	67,648	69,274
Utah.....	W	-	47,553	43,366	80,509	67,310
Wyoming.....	W	W	61,444	69,974	34,857	43,585
Total.....	67,182	522	319,322	300,813	198,525	192,620
PAD Dist. V						
Alaska.....	-	-	11,615	11,930	-	W
Arizona.....	-	-	67,227	71,827	15,319	13,641
California....	W	W	722,009	662,903	522,552	565,232
Hawaii.....	-	-	W	W	-	-
Nevada.....	-	-	73,595	46,949	W	W
Oregon.....	-	-	67,427	66,367	-	W
Washington....	-	-	98,318	91,495	215,815	146,511
Total.....	440	40,325	1,048,075	959,470	755,538	726,762
U.S. Total.....	7,198,422	8,030,862	15,343,608	14,315,784	7,859,712	8,050,140

W Data withheld to avoid disclosure of individual company data.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

Pentanes Plus 1989	Pentanes Plus 1988	Total 1989	Total 1988	District & State
				PAD Dist. I
				New England
-	W	68,467	67,279	...Connecticut
-	-	67,986	68,253	.....Maine
W	W	111,391	101,017	.Massachusetts
-	-	109,589	90,831	.New Hampshire
-	-	21,631	23,842	..Rhode Island
-	-	66,693	50,353	.....Vermont
				Central Atlantic
-	-	47,895	50,564	.....Delaware
-	-	93,973	72,979	.Maryland/D.C.
W	W	226,212	290,798	....New Jersey
W	W	245,992	227,064	.....New York
W	W	326,969	364,568	..Pennsylvania
				Lower Atlantic
-	W	351,819	360,978	.....Florida
W	W	328,135	292,872	.....Georgia
W	W	414,242	341,994	North Carolina
W	W	162,281	152,863	South Carolina
W	-	198,256	185,097	.....Virginia
W	W	56,071	44,516	.West Virginia
6,0 4	22,647	2,897,602	2,785,868	.....Total
				PAD Dist. II
50,709	34,395	1,054,458	2,397,539	.....Illinois
59,107	54,073	580,708	538,738	.....Indiana
W	W	431,364	426,111	.....Iowa
592,805	746,139	1,713,154	1,984,435	.....Kansas
9,520	10,216	384,740	445,947	.....Kentucky
27,123	W	1,022,392	1,011,151	.....Michigan
W	W	365,027	360,134	.....Minnesota
W	W	473,720	411,175	.....Missouri
W	W	215,573	225,990	.....Nebraska
W	6,371	122,695	127,206	..North Dakota
W	W	797,592	659,111	.....Ohio
39,983	44,040	444,878	413,113	.....Oklahoma
-	-	217,858	101,005	..South Dakota
W	W	199,315	187,883	.....Tennessee
W	W	409,700	374,400	.....Wisconsin
787,954	922,081	8,433,174	9,663,938	.....Total
				PAD Dist. III
W	1,571	268,498	213,210	.....Alabama
W	W	205,420	166,116	.....Arkansas
786,470	986,162	3,770,934	4,272,948	.....Louisiana
320,608	194,357	609,523	425,147	...Mississippi
77,538	41,070	379,294	126,117	....New Mexico
2,530,944	2,402,823	15,959,917	15,094,141	.....Texas
3,717,724	3,626,483	21,193,586	20,297,679	.....Total
				PAD Dist. IV
W	3,924	160,249	120,261	.....Colorado
-	-	33,932	30,689	.....Idaho
W	2,282	132,728	124,454	.....Montana
42,940	35,803	171,176	146,479	.....Utah
27,245	19,342	158,073	133,423	.....Wyoming
71,129	61,351	656,158	555,306	.....Total
				PAD Dist. V
W	W	11,704	12,112	.....Alaska
W	W	82,574	85,500	.....Arizona
99,275	175,285	1,344,276	1,443,745	....California
-	-	7,784	7,999	.....Hawaii
W	W	75,588	48,179	.....Nevada
-	-	67,427	66,488	.....Oregon
W	-	314,155	238,006	....Washington
99,455	175,472	1,903,508	1,902,029	.....Total
4,682,286	4,808,034	35,084,028	35,204,820	.....U.S. Total

Table 3. Sales of Natural Gas Liquids and Liquefied Refinery Gases, by End Use, PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Residential & Commercial 1989	Residential & Commercial 1988	Internal Combustion Fuel 1989	Internal Combustion Fuel 1988	Chemical 1/ 1989	Chemical 1/ 1988	Industrial 2/ 1989	Industrial 2/ 1988
PAD Dist. I								
New England								
Connecticut	44,030	38,088	3,074	2,815	W	W	14,241	15,794
Maine	48,245	46,422	2,958	2,752	W	W	14,230	14,291
Massachusetts	83,127	68,522	6,010	5,709	-	W	11,011	11,336
New Hampshire	84,545	69,514	1,347	1,338	-	-	9,633	8,538
Rhode Island	14,269	13,528	1,817	1,909	-	-	4,337	5,020
Vermont	60,795	46,506	1,066	1,017	-	-	3,313	1,424
Central Atlantic								
Delaware	28,632	27,970	672	564	W	W	2,912	6,498
Maryland/D.C.	57,746	46,080	5,622	5,299	-	-	16,682	14,840
New Jersey	68,291	69,311	8,049	8,151	124,649	160,183	16,651	19,854
New York	205,983	190,754	14,932	11,295	519	W	15,970	15,136
Pennsylvania	132,327	121,085	16,601	16,348	W	W	110,270	72,474
Lower Atlantic								
Florida	253,754	249,832	20,716	20,226	W	W	30,927	32,431
Georgia	214,467	191,043	11,403	12,639	W	W	37,282	31,322
North Carolina	252,697	184,222	14,903	13,742	792	294	36,132	44,109
South Carolina	109,433	101,091	8,651	7,975	W	288	20,030	22,731
Virginia	109,133	91,587	8,987	9,089	847	W	27,574	31,350
West Virginia	20,767	17,188	1,908	2,064	27,134	19,066	3,004	3,203
Total	1,788,241	1,572,743	128,716	122,932	159,705	185,397	374,199	350,351
PAD Dist. II								
Illinois	253,392	239,237	37,953	47,691	71,764	1,328,370	48,156	42,031
Indiana	295,144	265,750	21,560	21,164	W	668	25,895	10,998
Iowa	243,767	241,114	7,279	6,520	W	W	15,072	10,449
Kansas	104,994	112,599	26,288	19,925	312,145	389,792	49,443	29,702
Kentucky	160,677	168,414	10,339	10,362	W	W	144,793	163,828
Michigan	516,947	509,809	40,437	48,964	W	W	104,049	64,110
Minnesota	225,837	223,216	8,768	10,541	W	W	37,049	28,534
Missouri	360,652	303,446	16,532	14,598	554	613	35,323	27,633
Nebraska	87,460	93,814	9,327	7,278	W	W	12,423	7,739
North Dakota	60,591	58,952	2,511	2,282	W	W	5,401	7,439
Ohio	326,647	312,747	53,217	49,465	W	W	230,491	153,189
Oklahoma	109,025	103,856	12,124	14,504	83,744	57,940	59,313	38,556
South Dakota	102,644	74,168	2,855	2,727	-	-	6,709	2,147
Tennessee	143,088	137,515	22,113	20,807	W	W	22,010	16,987
Wisconsin	321,305	273,753	17,320	19,214	W	W	19,396	18,575
Total	3,312,170	3,118,390	288,623	296,042	512,224	1,813,777	815,523	621,917
PAD Dist. III								
Alabama	195,626	154,765	10,816	10,847	W	W	15,965	12,843
Arkansas	131,578	104,765	8,636	8,898	W	W	5,271	4,526
Louisiana	58,225	53,735	8,672	9,770	1,481,040	1,623,794	254,411	302,921
Mississippi	146,294	116,079	13,625	16,161	19,695	W	41,480	18,188
New Mexico	78,783	50,378	13,436	8,711	W	W	5,346	4,728
Texas	420,894	346,372	55,058	55,624	10,608,172	10,612,232	88,952	215,147
Total	1,031,400	826,094	110,243	110,011	12,301,323	12,240,287	411,425	558,353
PAD Dist. IV								
Colorado	76,002	66,851	5,600	5,262	W	-	28,678	25,270
Idaho	19,014	15,521	3,878	3,964	-	-	5,467	7,113
Montana	39,539	34,054	5,051	4,725	-	W	13,231	9,705
Utah	22,225	30,454	5,301	6,331	W	W	8,445	9,177
Wyoming	28,143	42,275	3,349	5,008	W	W	55,022	21,241
Total	184,923	189,155	23,179	25,290	57,173	9,063	110,843	72,506
PAD Dist. V								
Alaska	9,738	8,792	711	896	-	-	756	W
Arizona	40,498	44,963	6,205	7,012	W	W	12,204	11,358
California	308,260	304,251	86,663	97,583	11,235	46,805	501,050	323,328
Hawaii	W	W	W	W	-	-	-	-
Nevada	41,927	32,677	1,935	2,358	W	W	10,585	7,854
Oregon	17,648	16,584	18,148	21,780	-	-	18,937	18,425
Washington	29,895	27,900	24,309	29,942	W	-	71,973	30,726
Total	454,818	442,201	138,868	160,503	23,047	46,882	615,505	393,422
U.S. Total	6,771,552	6,148,583	689,629	714,778	13,053,472	14,295,406	2,327,495	1,996,549

1/ The reported data strongly suggest that this category includes not only ethane, propane, butane and pentanes plus consumed as chemical feedstocks, but some refinery olefins and chemical plant fuel usage.
2/ Includes sales for refinery fuel use and synthetic rubber manufacture.
3/ Includes use as synthetic natural gas feedstock, and use in secondary recovery of petroleum.

W Data withheld to avoid disclosure of individual company data.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

Gas Utility 1989	Gas Utility 1988	Farm 1989	Farm 1988	Other 3/ 1989	Other 3/ 1988	Total 1989	Total 1988	District & State
								PAD Dist. I
								New England
W	W	2,859	2,501	W	2,519	68,467	64,580	...Connecticut
W	3,360	238	209	W	W	67,986	68,253	.....Maine
9,029	13,055	781	643	1,433	1,702	111,391	101,017	.Massachusetts
W	W	59	28	12,659	W	109,589	90,831	.New Hampshire
W	W	W	138	W	W	21,631	23,842	..Rhode Island
W	-	245	127	W	W	66,693	50,353	.....Vermont
								Central Atlantic
-	-	7,847	7,748	W	W	42,197	43,199	.....Delaware
-	-	10,871	6,153	3,052	607	93,973	72,979	.Maryland/D.C.
813	W	926	854	5,980	5,917	225,359	264,625	....New Jersey
W	W	5,833	6,753	2,588	1,784	245,992	226,665	.....New York
W	1,585	26,240	22,955	9,113	8,963	298,418	245,156	..Pennsylvania
								Lower Atlantic
18,003	W	18,568	19,451	9,309	6,295	351,819	345,293	.....Florida
266	W	59,437	51,761	4,630	5,102	328,135	292,854	.....Georgia
W	891	102,933	94,664	6,195	4,072	414,242	341,994	North Carolina
199	W	22,052	18,560	1,664	2,192	162,281	152,863	South Carolina
W	W	35,005	29,999	16,687	22,846	198,256	185,097	.....Virginia
-	W	3,236	2,927	W	W	56,071	44,516	.West Virginia
35,532	42,369	297,178	265,471	78,929	74,854	2,862,500	2,614,117	.....Total
								PAD Dist. II
120,427	124,705	104,788	107,408	6,364	8,547	642,844	1,897,989	.....Illinois
W	W	100,648	88,642	6,928	6,409	469,152	404,492	.....Indiana
W	-	158,830	160,380	2,969	4,615	431,364	426,111	.....Iowa
87,882	W	62,052	53,645	277,074	280,374	919,878	928,520	.....Kansas
W	W	24,365	20,959	1,647	766	343,947	366,844	.....Kentucky
W	W	45,435	41,842	218,306	220,882	956,894	913,562	.....Michigan
W	W	73,747	78,333	1,787	2,862	351,557	343,903	.....Minnesota
W	W	40,666	61,166	4,505	2,896	473,499	410,553	.....Missouri
W	-	105,684	116,320	199	156	215,455	225,595	.....Nebraska
W	W	34,353	22,453	637	719	103,909	92,935	..North Dakota
W	W	62,662	58,852	5,575	7,036	680,176	582,669	.....Ohio
W	W	19,412	36,025	3,298	5,986	286,920	256,870	.....Oklahoma
-	-	104,628	20,155	1,022	1,808	217,858	101,005	..South Dakota
W	W	7,734	8,081	3,882	3,854	199,315	187,734	.....Tennessee
-	W	44,734	53,933	6,891	8,854	409,700	374,400	.....Wisconsin
243,106	179,098	989,738	928,194	541,084	555,764	6,702,468	7,513,182	.....Total
								PAD Dist. III
W	658	34,767	22,951	926	1,728	259,385	204,227	.....Alabama
W	W	49,101	41,532	2,947	3,540	204,628	164,169	.....Arkansas
-	W	11,210	8,506	83,881	165,864	1,897,439	2,216,385	.....Louisiana
-	-	22,245	17,107	679	939	244,018	170,996	...Mississippi
W	-	7,093	2,586	12,594	841	302,764	67,693	....New Mexico
W	24,618	65,904	68,414	775,275	131,193	12,014,468	11,453,600	.....Texas
1,689	77,124	190,320	161,096	876,302	304,105	14,922,702	14,277,070	.....Total
								PAD Dist. IV
-	-	7,205	10,564	1,856	1,753	152,458	109,700	.....Colorado
-	-	2,722	2,624	2,851	1,467	33,932	30,689	.....Idaho
-	-	2,748	1,550	4,501	2,842	65,070	52,958	.....Montana
-	W	1,508	2,205	W	W	54,928	51,585	.....Utah
-	W	2,293	3,477	2,534	3,217	100,415	83,483	.....Wyoming
-	272	16,476	20,420	14,209	11,709	406,803	328,415	.....Total
								PAD Dist. V
-	-	W	W	W	W	11,615	11,930	.....Alaska
W	W	4,111	3,794	2,422	2,831	67,258	71,859	.....Arizona
1,210	35,214	43,820	38,203	41,682	36,517	993,920	881,901	....California
-	-	W	W	W	W	7,784	7,999	.....Hawaii
-	-	1,811	1,714	5,724	W	73,744	46,999	.....Nevada
W	-	7,348	5,913	5,315	3,786	67,427	66,488	.....Oregon
-	-	5,366	6,285	4,885	5,507	136,450	100,360	....Washington
3,031	37,083	62,498	55,995	60,431	51,450	1,358,198	1,187,536	.....Total
283,358	335,946	1,556,210	1,431,176	1,570,955	997,882	26,252,671	25,920,320	.....U.S. Total

Table 4. Sales of Propane, by Use, in the United States, by PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Residential & Commercial 1989	Residential & Commercial 1988	Internal Combustion Fuel 1989	Internal Combustion Fuel 1988	Chemical 1/ 1989	Chemical 1/ 1988	Industrial 2/ 1989	Industrial 2/ 1988
PAD Dist. I								
New England								
Connecticut...	44,030	38,088	3,074	2,815	W	W	14,241	15,794
Maine.....	48,245	46,422	2,958	2,752	W	W	14,230	14,291
Massachusetts.	83,127	68,522	6,010	5,709	-	-	11,011	11,336
New Hampshire.	84,545	69,514	1,347	1,338	-	-	9,633	8,538
Rhode Island..	14,269	13,528	1,817	1,909	-	-	4,337	5,020
Vermont.....	60,795	46,506	1,066	1,017	-	-	3,313	1,424
Central Atlantic								
Delaware.....	28,632	27,970	672	564	W	W	2,912	3,063
Maryland/D.C..	57,746	46,080	5,622	5,299	-	-	16,662	14,840
New Jersey....	68,291	69,311	8,049	8,151	100,940	116,855	16,651	19,854
New York.....	205,983	190,754	14,932	11,295	416	W	15,970	15,136
Pennsylvania..	132,327	121,085	16,601	16,348	-	W	82,439	71,566
Lower Atlantic								
Florida.....	253,719	249,794	20,716	20,226	-	-	30,927	32,431
Georgia.....	214,467	191,043	11,403	12,639	-	W	37,282	31,318
North Carolina	252,697	184,222	14,903	13,742	611	W	36,132	44,109
South Carolina	109,433	10	8,651	7,975	-	W	20,030	22,731
Virginia.....	109,133	91,307	8,987	9,089	642	-	27,574	30,731
West Virginia.	20,767	17,188	1,908	2,064	W	W	3,004	3,203
Total.....	1,788,206	1,572,705	128,716	122,932	127,977	138,753	346,357	345,365
PAD Dist. II								
Illinois.....	253,392	239,237	37,953	47,691	W	138,942	30,187	26,805
Indiana.....	295,144	265,750	21,560	21,164	W	140	25,764	10,998
Iowa.....	243,767	241,114	7,279	6,520	-	-	15,072	10,449
Kansas.....	104,994	112,599	26,288	19,925	54,525	42,987	47,080	29,649
Kentucky.....	160,677	168,414	10,339	10,362	W	W	128,859	113,134
Michigan.....	516,947	509,809	40,437	48,964	W	W	87,513	64,110
Minnesota.....	225,837	223,216	8,768	10,541	-	-	35,438	28,534
Missouri.....	360,652	303,446	16,532	14,598	W	W	35,323	27,633
Nebraska.....	87,460	93,814	9,327	7,278	W	W	12,422	7,739
North Dakota..	60,591	58,952	2,511	2,282	-	-	5,399	7,439
Ohio.....	326,647	312,747	53,217	49,465	-	-	169,246	147,409
Oklahoma.....	109,025	103,856	12,124	14,504	W	W	58,044	38,556
South Dakota..	102,644	74,168	2,855	2,727	-	-	6,709	2,147
Tennessee.....	143,088	137,515	22,113	20,807	W	W	22,610	16,987
Wisconsin.....	321,305	273,753	17,320	19,214	-	-	19,396	18,575
Total.....	3,312,170	3,118,390	288,623	296,042	84,138	210,992	698,462	550,164
PAD Dist. III								
Alabama.....	195,599	154,741	10,816	10,847	-	W	15,900	12,496
Arkansas.....	131,578	104,765	8,636	8,898	-	-	5,268	4,526
Louisiana.....	58,225	53,735	8,585	9,770	513,758	341,547	25,027	71,993
Mississippi...	146,205	115,921	13,625	16,161	W	-	40,830	18,188
New Mexico....	78,783	50,378	13,436	8,711	-	-	5,267	4,728
Texas.....	420,679	346,138	54,941	55,624	3,185,650	3,477,164	67,718	50,354
Total.....	1,031,069	825,678	110,039	110,011	3,718,683	3,818,716	160,010	162,285
PAD Dist. IV								
Colorado.....	76,002	66,851	5,600	5,262	W	-	20,212	19,465
Idaho.....	19,014	15,512	3,878	3,964	-	-	5,467	7,113
Montana.....	39,539	34,054	5,051	4,725	-	W	12,785	9,705
Utah.....	22,225	23,726	5,301	5,985	W	-	8,289	8,946
Wyoming.....	28,143	36,899	3,349	4,733	W	W	19,820	20,979
Total.....	184,923	177,042	23,179	24,669	13,962	493	66,573	66,208
PAD Dist. V								
Alaska.....	9,738	8,792	711	896	-	-	756	W
Arizona.....	40,498	44,963	6,205	7,012	-	-	12,201	11,358
California....	307,043	301,982	86,542	97,448	W	W	234,092	155,530
Hawaii.....	W	W	W	W	-	-	-	-
Nevada.....	41,927	32,677	1,927	2,353	W	-	10,585	7,854
Oregon.....	17,648	16,584	18,148	21,780	-	-	18,937	18,304
Washington....	29,895	27,900	24,309	29,942	-	-	33,863	21,861
Total.....	453,601	439,932	138,739	160,363	22,666	45,661	310,434	216,638
U.S. Total.....	6,769,969	6,133,747	689,296	714,017	3,967,426	4,214,615	1,581,836	1,340,680

1/ The reported data strongly suggest that this category includes not only propane consumed as a chemical feedstock, but some refinery olefins and chemical plant fuel usage.
2/ Includes sales for refinery fuel use.

W Data withheld to avoid disclosure of individual company data.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

Gas Utility		Farm		Other		Total		District & State
1989	1988	1989	1988	1989	1988	1989	1988	
								PAD Dist. I
								New England
w	w	2,859	2,581	w	1,946	67,990	64,007	...Connecticut
w	3,360	238	209	w	w	67,766	68,253	.....Maine
9,029	13,055	781	643	1,185	1,160	111,143	100,425	.Massachusetts
w	w	59	28	12,659	w	109,589	90,831	.New Hampshire
w	w	w	138	w	w	21,066	23,191	..Rhode Island
w	-	245	127	w	w	66,693	50,353	.....Vermont
								Central Atlantic
-	-	7,847	7,748	w	w	42,197	39,764	.....Delaware
-	-	10,671	6,153	2,984	500	93,905	72,872	.Maryland/D.C.
813	w	926	854	4,950	4,427	200,620	219,807	....New Jersey
w	w	5,833	6,753	2,369	1,756	245,670	226,584	.....New York
w	1,585	26,240	22,955	8,905	8,841	267,543	242,454	..Pennsylvania
								Lower Atlantic
18,003	w	18,568	19,452	9,309	6,295	351,242	344,908	.....Florida
266	w	59,437	51,761	3,161	3,327	326,016	290,461	.....Georgia
w	841	102,933	94,664	5,733	2,931	413,599	340,757	North Carolina
199	w	22,052	18,560	1,561	2,111	161,926	152,569	South Carolina
w	w	35,005	29,999	16,674	22,831	196,038	184,333	.....Virginia
-	w	3,236	2,927	w	w	52,810	44,375	.West Virginia
35,532	42,369	297,178	265,471	74,067	68,349	2,798,033	2,555,944	.....Total
								PAD Dist. II
3,884	22,706	104,780	107,408	4,281	4,884	434,612	587,673	.....Illinois
w	w	100,648	88,642	4,613	5,947	454,910	403,502	.....Indiana
w	-	158,830	160,380	2,931	4,577	429,199	423,040	.....Iowa
12,614	w	62,052	53,645	66,326	22,225	373,879	323,433	.....Kansas
w	w	24,365	20,959	1,455	766	326,821	314,803	.....Kentucky
w	w	45,435	41,842	85,665	80,332	807,408	772,611	.....Michigan
w	w	73,747	78,333	580	1,359	344,880	342,259	.....Minnesota
w	w	40,666	61,166	3,582	2,226	472,073	409,476	.....Missouri
-	-	105,684	116,320	184	156	215,249	225,479	.....Nebraska
w	w	34,353	22,453	610	719	103,522	92,014	..North Dakota
w	w	62,662	58,852	5,062	6,637	617,026	575,162	.....Ohio
w	w	19,412	36,025	3,298	1,763	202,011	194,734	.....Oklahoma
-	-	104,628	20,155	1,022	1,808	217,858	101,005	..South Dakota
w	w	7,734	8,081	3,016	2,689	198,084	186,294	.....Tennessee
-	w	44,734	53,933	6,517	8,436	409,272	373,918	.....Wisconsin
44,331	77,099	989,738	928,194	189,342	144,524	5,606,804	5,325,405	..... Total
								PAD Dist. III
w	w	34,767	22,951	926	1,728	259,123	203,424	.....Alabama
-	w	49,101	41,522	2,343	3,409	196,926	163,173	.....Arkansas
-	w	11,210	8,506	w	6,289	617,416	543,635	.....Louisiana
-	-	22,245	17,107	661	927	242,841	168,304	...Mississippi
-	-	7,093	2,586	793	841	105,372	67,244	....New Mexico
w	24,618	65,882	68,386	354,613	6,088	4,149,696	4,028,372	.....Texas
1,328	77,122	190,298	161,058	359,947	19,282	5,571,374	5,174,152	.....Total
								PAD Dist. IV
-	-	7,205	10,564	1,856	1,753	111,769	103,895	.....Colorado
-	-	2,722	2,624	2,851	1,467	33,932	30,680	.....Idaho
-	-	2,748	1,550	4,501	2,842	64,624	52,898	.....Montana
-	w	1,508	2,205	w	w	47,553	43,366	.....Utah
-	w	2,293	3,477	2,534	3,217	61,444	69,974	.....Wyoming
-	272	16,476	20,420	14,209	11,709	319,322	300,813	.....Total
								PAD Dist. V
-	-	w	w	w	w	11,615	11,930	.....Alaska
w	w	4,111	3,794	2,422	2,831	67,227	71,827	.....Arizona
w	w	43,711	38,090	38,906	22,560	722,009	662,903	....California
-	-	w	w	w	w	7,784	7,999	.....Hawaii
-	-	1,811	1,714	5,724	w	73,695	46,949	.....Nevada
w	-	7,348	5,913	5,315	3,786	67,427	66,367	.....Oregon
-	-	5,366	6,285	4,885	5,507	98,318	91,495	....Washington
2,591	3,501	62,389	55,882	57,655	37,493	1,048,075	959,470	.....Total
83,782	200,363	1,556,079	1,431,025	695,220	281,337	15,343,608	14,315,784	.....U.S. Total

Table 5. Sales of Butane, by Use, in the United States, by PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Residential & Commercial 1989	Residential & Commercial 1988	Internal Combustion Fuel 1989	Internal Combustion Fuel 1988	Chemical 1/ 1989	Chemical 1/ 1988	Industrial 2/ 1989	Industrial 2/ 1988
PAD Dist. I								
New England								
Connecticut	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	-	-	-	-	-
New Hampshire	-	-	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-	-	-
Vermont	-	-	-	-	-	-	-	-
Central Atlantic								
Delaware	-	-	-	-	-	-	-	W
Maryland/D.C.	-	-	-	-	-	-	-	-
New Jersey	-	-	-	-	W	W	-	-
New York	-	-	-	-	W	W	-	-
Pennsylvania	-	-	-	-	-	-	27,842	W
Lower Atlantic								
Florida	W	W	-	-	-	-	-	-
Georgia	-	-	-	-	-	-	-	W
North Carolina	-	-	-	-	W	W	-	-
South Carolina	-	-	-	-	W	W	-	-
Virginia	-	-	-	-	W	W	-	W
West Virginia	-	-	-	-	-	-	-	-
Total	35	38	-	-	22,175	42,123	27,842	8,966
PAD Dist. II								
Illinois	-	-	-	-	W	20,048	W	15,226
Indiana	-	-	-	-	W	W	-	-
Iowa	-	-	-	-	W	W	-	-
Kansas	-	-	-	-	25,492	36,137	W	-
Kentucky	-	-	-	-	-	-	W	W
Michigan	-	-	-	-	-	-	W	-
Minnesota	-	-	-	-	-	-	W	-
Missouri	-	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-	-
North Dakota	-	-	-	-	-	-	-	-
Ohio	-	-	-	-	-	-	W	W
Oklahoma	-	-	-	-	W	W	W	-
South Dakota	-	-	-	-	-	-	-	-
Tennessee	-	-	-	-	-	-	-	-
Wisconsin	-	-	-	-	-	-	-	-
Total	-	-	-	-	43,578	105,850	112,732	36,215
PAD Dist. III								
Alabama	W	W	-	-	W	W	-	-
Arkansas	-	-	-	-	W	W	-	-
Louisiana	-	-	W	-	41,841	180,261	W	130,918
Mississippi	89	158	-	-	-	W	W	-
New Mexico	-	-	-	-	W	W	W	-
Texas	215	234	W	-	1,853,639	1,506,569	W	14,526
Total	331	416	204	-	1,904,256	1,689,569	248,367	245,454
PAD Dist. IV								
Colorado	-	-	-	-	W	-	W	W
Idaho	-	W	-	-	-	-	-	-
Montana	-	-	-	-	-	W	W	-
Utah	-	W	-	W	W	W	W	W
Wyoming	-	W	-	W	W	W	W	-
Total	-	12,113	-	621	13,312	5,050	6,637	5,036
PAD Dist. V								
Alaska	-	-	-	-	-	-	-	-
Arizona	-	-	-	-	-	-	W	-
California	1,217	2,269	W	W	-	W	266,958	161,055
Hawaii	-	-	-	-	-	-	-	-
Nevada	-	-	W	W	-	-	-	-
Oregon	-	-	-	-	-	-	-	W
Washington	-	-	-	-	-	-	38,110	8,965
Total	1,217	2,269	129	140	-	258	305,071	170,041
U.S. Total	1,583	14,836	333	761	1,983,321	1,842,850	700,649	462,712

1/ The reported data strongly suggest that this category includes not only butane consumed as a chemical feedstock, but some refinery olefins and chemical plant fuel usage.
2/ Includes sales for refinery fuel use and synthetic rubber manufacture.
3/ Includes use in secondary recovery of petroleum.

W Data withheld to avoid disclosure of individual company data.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

Gas Utility		Farm		Other 3/		Total		District & State
1989	1988	1989	1988	1989	1988	1989	1988	
								PAD Dist. I
								New England
-	-	-	-	W	W	477	573	...Connecticut
-	-	-	-	-	-	-	-	.....Maine
-	-	-	-	W	W	534	539	.Massachusetts
-	-	-	-	-	-	-	-	.New Hampshire
-	-	-	-	W	W	565	651	..Rhode Island
-	-	-	-	-	-	-	-	.....Vermont
								Central Atlantic
-	-	-	-	-	-	-	3,435	.....Delaware
-	-	-	-	W	W	68	107	.Maryland/D.C.
-	-	-	-	W	W	22,787	43,241	....New Jersey
-	-	-	-	W	W	223	27	.....New York
-	-	-	-	W	W	28,050	1,030	..Pennsylvania
								Lower Atlantic
-	-	-	-	-	-	35	38	.....Florida
-	-	-	-	W	W	1,469	1,779	.....Georgia
-	-	-	-	W	W	546	1,214	North Carolina
-	-	-	-	W	-	200	165	South Carolina
-	-	-	-	W	W	148	764	.....Virginia
-	-	-	-	-	-	-	-	.West Virginia
-	-	-	-	4,760	6,436	54,812	53,563	.....Total
								PAD Dist. II
-	-	-	-	W	W	36,743	38,937	.....Illinois
-	-	-	-	W	W	421	463	.....Indiana
-	-	-	-	W	W	1,282	1,739	.....Iowa
-	-	-	-	W	W	87,103	116,872	.....Kansas
-	-	-	-	-	-	11,810	15,209	.....Kentucky
-	-	-	-	W	W	67,984	59,974	.....Michigan
-	-	-	-	W	W	2,159	1,503	.....Minnesota
-	-	-	-	W	W	923	670	.....Missouri
-	-	-	-	-	-	-	-	.....Nebraska
-	-	-	-	-	-	-	-	..North Dakota
-	-	-	-	W	W	61,750	6,179	.....Ohio
-	-	-	-	-	W	1,417	47,967	.....Oklahoma
-	-	-	-	-	-	-	-	..South Dakota
-	-	-	-	W	W	866	1,165	.....Tennessee
-	-	-	-	W	W	374	418	.....Wisconsin
-	-	-	-	116,522	149,031	272,832	291,096	.....Total
								PAD Dist. III
-	W	-	-	-	-	35	36	.....Alabama
-	-	-	W	W	W	257	496	.....Arkansas
-	-	-	-	W	W	271,313	415,148	.....Louisiana
-	-	-	-	W	W	747	2,206	...Mississippi
-	-	-	-	-	-	8,622	338	....New Mexico
-	-	W	28	W	W	1,894,140	1,521,818	.....Texas
-	2	22	38	21,934	4,563	2,175,114	1,940,042	.....Total
								PAD Dist. IV
-	-	-	-	-	-	8,208	5,805	.....Colorado
-	-	-	-	-	-	-	9	.....Idaho
-	-	-	-	-	-	446	5	.....Montana
-	-	-	-	-	-	6,851	7,937	.....Utah
-	-	-	-	-	-	4,444	10,064	.....Wyoming
-	-	-	-	-	-	19,949	23,820	.....Total
								PAD Dist. V
-	-	-	-	-	-	-	-	.....Alaska
-	-	-	-	-	-	3	-	.....Arizona
-	-	W	W	W	W	271,168	174,204	....California
-	-	-	-	-	-	-	-	.....Hawaii
-	-	-	-	-	-	8	5	.....Nevada
-	-	-	-	-	-	-	121	.....Oregon
-	-	-	-	-	-	38,110	8,865	....Washington
-	-	109	113	2,763	10,374	309,289	183,195	.....Total
-	2	131	151	145,979	170,404	2,831,996	2,491,716	.....U.S. Total

Table 6. Sales of Ethane, by use, in the United States, by PAD District, 1989 and 1988 (Thousands of Gallons)

District	Residential & Commercial		Internal Combustion Fuel		Chemical		Industrial 1/	
	1989	1988	1989	1988	1989	1988	1989	1988
PAD Dist. I	-	-	-	-	3,631	347	-	-
PAD Dist. II	-	-	-	-	374,486	1,448,223	6,329	35,538
PAD Dist. III	-	-	-	-	5,989,366	5,914,707	3,048	150,614
PAD Dist. IV	-	-	-	-	29,549	260	37,633	262
PAD Dist. V	-	-	-	-	-	-	-	6,743
U.S. Total.....	-	-	-	-	6,397,032	7,363,537	45,010	193,157

Table 7. Sales of Pentanes Plus, by Use, in the United States, by PAD District, 1989 and 1988 (Thousands of Gallons)

District	Residential & Commercial		Internal Combustion Fuel		Chemical		Industrial 1/	
	1989	1988	1989	1988	1989	1988	1989	1988
PAD Dist. I	-	-	-	-	5,922	6,174	-	-
PAD Dist. II	-	-	-	-	10,022	48,712	-	-
PAD Dist. III	-	-	-	-	689,018	817,295	-	-
PAD Dist. IV	-	-	-	-	350	3,260	-	-
PAD Dist. V	-	-	-	-	381	963	-	-
U.S. Total.....	-	-	-	-	705,693	874,404	-	-

1/ The reported data strongly suggest that this category includes not only ethane, propane, butane and pentanes plus consumed as chemical feedstocks, but some refinery olefins and chemical plant fuel usage.
2/ Includes sales for refinery fuel use and synthetic rubber manufacture.

W Data withheld to avoid disclosure of individual company data.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

Gas Utility		Farm		Other 2/		Total		
1989	1988	1989	1988	1989	1988	1989	1988	District
-	-	-	-	-	-	3,631	347	PAD Dist. I
198,775	101,999	-	-	63,665	60,938	641,255	1,646,698	PAD Dist. II
361	-	-	-	493,139	277,649	6,485,914	6,342,970	PAD Dist. III
-	-	-	-	-	-	67,182	522	PAD Dist. IV
440	33,582	-	-	-	-	440	40,325	PAD Dist. V
199,576	135,581	-	-	556,804	338,587	7,198,422	8,030,862	.....U.S. Total

Gas Utility		Farm		Other 2/		Total		
1989	1988	1989	1988	1989	1988	1989	1988	District
-	-	-	-	102	89	6,024	4,263	PAD Dist. I
-	-	-	-	171,555	201,271	181,577	249,983	PAD Dist. II
-	-	-	-	1,282	2,611	690,300	819,906	PAD Dist. III
-	-	-	-	-	-	350	3,260	PAD Dist. IV
-	-	-	-	13	3,583	394	4,546	PAD Dist. V
-	-	-	-	172,952	207,554	878,645	1,081,958	.....U.S. Total

Table 8. Sales of Natural Gas Liquids and Liquefied Refinery Gases for Gasoline Blending by Product Type, PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Butane		Pentanes Plus		Total	
	1989	1988	1989	1988	1989	1988
PAD Dist. I						
New England						
Connecticut...	-	-	-	W	-	2,699
Maine.....	-	-	-	-	-	-
Massachusetts.	-	-	-	-	-	-
New Hampshire.	-	-	-	-	-	-
Rhode Island..	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-
Central Atlantic						
Delaware.....	W	W	-	-	5,698	7,365
Maryland/D.C..	-	-	-	-	-	-
New Jersey....	W	26,173	-	-	853	26,173
New York.....	-	W	-	-	-	399
Pennsylvania..	28,551	119,412	-	-	28,551	119,412
Lower Atlantic						
Florida.....	-	-	-	W	-	15,685
Georgia.....	-	W	-	-	-	18
North Carolina	-	-	-	-	-	-
South Carolina	-	-	-	-	-	-
Virginia.....	-	-	-	-	-	-
West Virginia.	-	-	-	-	-	-
Total.....	35,102	153,367	-	18,384	35,102	171,751
PAD Dist. II						
Illinois.....	364,655	469,170	46,959	W	411,614	499,550
Indiana.....	52,914	80,700	W	W	111,556	134,246
Iowa.....	-	-	-	-	-	-
Kansas.....	349,730	514,242	443,546	541,673	793,276	1,055,915
Kentucky.....	W	W	W	8,869	40,793	79,103
Michigan.....	61,344	97,589	W	-	65,498	97,589
Minnesota.....	W	W	-	-	13,470	16,231
Missouri.....	W	W	-	-	221	622
Nebraska.....	W	W	W	W	118	395
North Dakota..	13,761	28,821	W	W	18,786	34,271
Ohio.....	117,416	76,442	-	-	117,416	76,442
Oklahoma.....	118,295	124,257	39,663	31,986	157,958	156,243
South Dakota..	-	-	-	-	-	-
Tennessee.....	-	W	-	-	-	149
Wisconsin.....	-	-	-	-	-	-
Total.....	1,124,329	1,478,658	606,377	672,098	1,730,706	2,150,756
PAD Dist. III						
Alabama.....	7,695	W	W	1,151	9,113	8,983
Arkansas.....	W	W	-	-	792	1,947
Louisiana.....	1,266,694	1,350,903	606,801	705,660	1,873,495	2,056,563
Mississippi...	45,317	W	W	W	365,505	254,151
New Mexico....	32,505	17,366	44,025	41,058	76,530	58,424
Texas.....	1,890,457	1,775,704	2,054,992	1,864,837	3,945,449	3,640,541
Total.....	3,243,460	3,214,032	3,027,424	2,806,577	6,270,884	6,020,609
PAD Dist. IV						
Colorado.....	7,303	6,637	W	3,924	7,791	10,561
Idaho.....	-	-	-	-	-	-
Montana.....	67,202	W	W	W	67,658	71,496
Utah.....	73,658	59,373	42,590	35,521	116,248	94,894
Wyoming.....	30,413	33,521	27,245	16,419	57,658	49,940
Total.....	178,576	168,800	70,779	58,091	249,355	226,891
PAD Dist. V						
Alaska.....	-	W	W	W	89	182
Arizona.....	15,316	13,641	-	-	15,316	13,641
California....	251,384	391,028	98,972	170,816	350,356	561,844
Hawaii.....	-	-	-	-	-	-
Nevada.....	W	W	-	-	1,844	1,180
Oregon.....	-	-	-	-	-	-
Washington....	177,705	137,646	-	-	177,705	137,646
Total.....	446,249	543,567	99,061	170,926	545,310	714,493
U.S. Total.....	5,027,716	5,558,424	3,803,641	3,726,076	8,831,357	9,284,500

W Data withheld to avoid disclosure of individual company data.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

PRODUCT DESCRIPTIONS AND DEFINITIONS

ETHANE—A normally gaseous paraffinic compound (C2H6). Include ethane sold in an ethane-propane mix. Note: Report ethane-ethylene mixtures for chemical use under Section A5. Subheading a. "Raw Materials and Solvents for Chemical Plants."

PROPANE—Include all products covered by the Gas Processors Association (GPA) specifications for commercial and HD-5 propane including propane sold in ethane-propane and butane-propane mixes. Also include propylene in this category.

BUTANE—Include all products covered by GPA specifications for commercial butane including butane sold in a butane-propane mix. Also include isobutane and butylene in this category.

PENTANES-PLUS—A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. Include isopentane, natural gasoline and plant condensate. Exclude field condensate which is mixed with crude oil and reported as part of crude oil and field condensate production to DOE.

LIQUEFIED REFINERY GASES (LRG)

Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration they are retained in the liquid state. The reporting categories are ethane/ethylene, propane/propylene, normal butane/butylene. Excludes still gas used for chemical or rubber manufacture which is reported as a petrochemical feedstock and also excludes liquefied petroleum gases intended for blending into gasoline which are reported as gasoline blending components. Liquefied refinery gases are reported for use as petrochemical feedstock or other uses.

STILL GAS (REFINERY GAS)

Any form of mixture of gas produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene, propane, propylene, etc. Still gas is reported to DOE for petrochemical feedstock use and/or refinery fuel use, but they should not be reported on this survey form if used in the gaseous state.

RESIDENTIAL AND COMMERCIAL USES—Include liquefied petroleum gases sold for use in private households and commercial establishments such as motels, restaurants, retail stores, laundries, etc., primarily for use in space heating, water heating and cooking. *LP gases used for space heating and cooking in farm houses should be reported under FARM USES.*

INTERNAL-COMBUSTION ENGINE FUEL—Include liquefied gases for use in highway vehicles, forklifts, oil-field drilling and production equipment, etc. *LP gases used for tractors and irrigation engines and other agricultural vehicles should be reported under FARM USES.*

INDUSTRIAL USES—Include liquefied petroleum gases sold to manufacturing plants for such uses as standby fuel, space heating, flame cutting, metallurgical furnaces etc. Include sales to petroleum refineries for fuel use. For internal use, include NGLs and LRGs consumed by your company as fuel. *Sales or internal use of NGLs and LRGs for gasoline blending should not be reported in this category. Such sales or internal use should be reported in Section B2.*

GAS DISTRIBUTION COMPANIES—Include sales of ethane and liquefied petroleum gases sold to gas utility companies for use as a standby fuel or direct distribution in gas mains.

RAW MATERIALS AND SOLVENTS FOR CHEMICAL PLANTS—Include natural gas liquids or liquified refinery gases sold or used internally as raw materials and solvents in the manufacture of chemicals. Also include volumes used in the production of synthetic rubber. *Sales to chemical plants for use as plant fuel should be reported in the "industrial use" category.*

FARM USES—Include liquefied petroleum gases sold for use in tractors, irrigation engines, *space heating of buildings (including farm houses)*, cooking, crop drying, tobacco curing, flame cultivation, poultry breeding, and other agricultural applications.

ALL OTHER USES—Include natural gas liquids, and liquefied refinery gas sold or used for any purpose not covered in the above categories, including secondary recovery use. Include NGLs and LRGs for use as SNG feedstock. Sales to SNG plants for use as plant fuel should be reported in the "industrial use" category.

Order No. 86462800

2300—9/89—4C(9C)
2300—10/90—3C(5A)C

American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

ERRATA – CORRECTED COPY

TABLE 1. Sales of Natural Gas Liquids and Liquefied Refinery Gases in the United States, 1989 and 1988 (Thousands of Gallons)

Category	1989	1988	VOLUME CHANGE	% CHANGE
Product Type:				
Ethane 1/.....	7,198,422	8,030,862	-832,440	-10.4
Propane 2/.....	15,343,608	14,315,784	1,027,824	7.2
Butane 3/.....	7,863,534	8,050,140	-186,606	-2.3
Pentanes Plus 4/.....	4,682,286	4,808,034	-125,748	-2.6
United States Total	35,087,850	35,204,820	-116,970	-0.3
Principal Uses:				
Residential & Commercial	6,771,552	6,148,583	622,969	10.1
Internal-Combustion Fuel	689,629	714,778	-25,149	-3.5
Chemical/Industrial:				
Chemical 5/6/.....	13,053,472	14,295,406	-1,241,934	-8.7
Industrial 7/.....	2,327,495	1,996,549	330,946	16.6
Gas Utility	283,358	335,946	-52,588	-15.7
Farm	1,556,210	1,431,176	125,034	8.7
Other 8/.....	1,570,955	997,882	573,073	57.4
Gasoline Blending	8,835,179	9,284,500	-449,321	-4.8
United States Total	35,087,850	35,204,820	-116,970	-0.3

1/ Includes ethylene.
2/ Includes propylene.
3/ Includes isobutane and butylene.
4/ Includes isopentane, natural gasoline and plant condensate. Excludes field condensate.
5/ Includes use in synthetic rubber manufacture.
6/ The reported data strongly suggest that this category includes not only ethane, propane, butane and pentanes plus consumed as chemical feedstocks, but some refinery olefins and chemical plant fuel usage.
7/ Includes refinery fuel use.
8/ Includes use as synthetic natural gas feedstock and use in secondary recovery projects.

Source: API, "Sales of Natural Gas Liquids and Liquefied Refinery Gases," Annual Survey.

ERRATA – CORRECTED COPY

Table 8. Sales of Natural Gas Liquids and Liquefied Refinery Gases for Gasoline Blending by Product Type, PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Butane		Pentanes Plus		Total	
	1989	1988	1989	1988	1989	1988
PAD Dist. I						
New England						
Connecticut...	-	-	-	W	-	2,699
Maine.....	-	-	-	-	-	-
Massachusetts.	-	-	-	-	-	-
New Hampshire.	-	-	-	-	-	-
Rhode Island..	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-
Central Atlantic						
Delaware.....	W	W	-	-	6,318	7,365
Maryland/D.C..	-	-	-	-	-	-
New Jersey....	W	26,173	-	-	946	26,173
New York.....	-	W	-	-	-	399
Pennsylvania..	31,660	119,412	-	-	31,660	119,412
Lower Atlantic						
Florida.....	-	-	-	W	-	15,685
Georgia.....	-	W	-	-	-	18
North Carolina	-	-	-	-	-	-
South Carolina	-	-	-	-	-	-
Virginia.....	-	-	-	-	-	-
West Virginia.	-	-	-	-	-	-
Total.....	38,924	153,367	-	18,384	38,924	171,751
PAD Dist. II						
Illinois.....	364,655	469,170	46,959	W	411,614	499,550
Indiana.....	52,914	80,700	W	W	111,556	134,246
Iowa.....	-	-	-	-	-	-
Kansas.....	349,730	514,242	443,546	541,673	793,276	1,055,915
Kentucky.....	W	W	W	8,869	40,793	79,103
Michigan.....	61,344	97,589	W	-	65,498	97,589
Minnesota.....	W	W	-	-	13,470	16,231
Missouri.....	W	W	-	-	221	622
Nebraska.....	W	W	W	W	118	395
North Dakota..	13,761	28,821	W	W	18,786	34,271
Ohio.....	117,416	76,442	-	-	117,416	76,442
Oklahoma.....	118,295	124,257	39,663	31,986	157,958	156,243
South Dakota..	-	-	-	-	-	-
Tennessee.....	-	W	-	-	-	149
Wisconsin.....	-	-	-	-	-	-
Total.....	1,124,329	1,478,658	606,377	672,098	1,730,706	2,150,756
PAD Dist. III						
Alabama.....	7,695	W	W	1,151	9,113	8,983
Arkansas.....	W	W	-	-	792	1,947
Louisiana.....	1,266,694	1,350,903	606,801	705,660	1,873,495	2,056,563
Mississippi...	45,317	W	W	W	365,505	254,151
New Mexico....	32,505	17,366	44,025	41,058	76,530	58,424
Texas.....	1,890,457	1,775,704	2,054,992	1,864,837	3,945,449	3,640,541
Total.....	3,243,460	3,214,032	3,027,424	2,806,577	6,270,884	6,020,609
PAD Dist. IV						
Colorado.....	7,303	6,637	W	3,924	7,791	10,561
Idaho.....	-	-	-	-	-	-
Montana.....	67,202	W	W	W	67,658	71,496
Utah.....	73,658	59,373	42,590	35,521	116,248	94,894
Wyoming.....	30,413	33,521	27,245	16,419	57,658	49,940
Total.....	178,576	168,800	70,779	58,091	249,355	226,891
PAD Dist. V						
Alaska.....	-	W	W	W	89	182
Arizona.....	15,316	13,641	-	-	15,316	13,641
California....	251,384	391,028	98,972	170,816	350,356	561,844
Hawaii.....	-	-	-	-	-	-
Nevada.....	W	W	-	-	1,844	1,180
Oregon.....	-	-	-	-	-	-
Washington....	177,705	137,646	-	-	177,705	137,646
Total.....	446,249	543,567	99,061	170,926	545,310	714,493
U.S. Total.....	5,031,538	5,558,424	3,803,641	3,726,076	8,835,179	9,284,500

ERRATA – CORRECTED COPY

Table 2. Sales of Natural Gas Liquids and Liquefied Refinery Gases by Product Type, PAD District and State, 1989 and 1988 (Thousands of Gallons)

District & State	Ethane		Propane		Butane	
	1989	1988	1989	1988	1989	1988
PAD Dist. I						
New England						
Connecticut...	-	-	67,990	64,007	W	W
Maine.....	-	-	67,986	68,253	-	-
Massachusetts.	-	-	111,143	100,425	W	W
New Hampshire.	-	-	109,589	90,831	-	-
Rhode Island..	-	-	21,066	23,191	W	W
Vermont.....	-	-	66,693	50,353	-	-
Central Atlantic						
Delaware.....	-	-	42,197	39,764	W	W
Maryland/D.C..	-	-	93,905	72,872	W	W
New Jersey....	-	-	200,620	219,807	23,733	69,414
New York.....	-	-	245,670	226,584	W	W
Pennsylvania..	-	-	267,543	242,454	59,710	120,442
Lower Atlantic						
Florida.....	W	W	351,242	344,908	W	W
Georgia.....	-	-	326,016	290,461	W	W
North Carolina	-	-	413,599	340,757	W	W
South Carolina	-	-	161,926	152,569	W	W
Virginia.....	-	-	198,038	184,333	W	764
West Virginia.	W	-	52,810	44,375	-	-
Total.....	3,631	347	2,798,033	2,555,944	93,736	206,930
PAD Dist. II						
Illinois.....	167,739	1,267,364	434,612	587,673	401,398	508,107
Indiana.....	W	-	454,910	403,502	53,335	81,163
Iowa.....	-	-	429,199	423,040	W	W
Kansas.....	309,637	283,749	373,879	323,433	436,833	631,114
Kentucky.....	W	W	326,821	314,803	44,275	85,443
Michigan.....	W	W	807,408	772,611	129,328	157,563
Minnesota.....	W	-	344,880	342,259	W	W
Missouri.....	-	-	472,073	409,478	W	1,292
Nebraska.....	W	-	215,249	225,479	W	W
North Dakota..	W	-	103,522	92,014	13,761	28,821
Ohio.....	W	-	617,026	575,162	179,166	82,621
Oklahoma.....	W	2,115	202,011	194,734	119,712	172,224
South Dakota..	-	-	217,858	101,005	-	-
Tennessee.....	-	-	198,084	186,294	W	W
Wisconsin.....	-	-	409,272	373,918	W	W
Total.....	641,255	1,646,698	5,606,804	5,325,405	1,397,161	1,769,754
PAD Dist. III						
Alabama.....	W	W	259,123	203,424	7,730	7,868
Arkansas.....	W	-	196,926	163,173	1,049	2,443
Louisiana.....	829,041	977,100	617,416	543,635	1,538,007	1,766,051
Mississippi...	W	-	242,841	168,304	46,064	62,486
New Mexico....	W	W	105,372	67,244	41,127	17,704
Texas.....	5,494,680	5,365,424	4,149,696	4,028,372	3,784,597	3,297,522
Total.....	6,485,914	6,342,970	5,571,374	5,174,152	5,418,574	5,154,074
PAD Dist. IV						
Colorado.....	W	-	111,769	103,895	15,511	12,442
Idaho.....	-	-	33,932	30,680	-	W
Montana.....	-	-	64,624	52,898	67,648	69,274
Utah.....	W	-	47,553	43,366	80,509	67,310
Wyoming.....	W	W	61,444	69,974	34,857	43,585
Total.....	67,182	522	319,322	300,813	198,525	192,620
PAD Dist. V						
Alaska.....	-	-	11,615	11,930	-	W
Arizona.....	-	-	67,227	71,827	15,319	13,641
California....	W	W	722,009	662,903	522,552	565,232
Hawaii.....	-	-	W	W	-	-
Nevada.....	-	-	73,695	46,949	W	W
Oregon.....	-	-	67,427	66,367	-	W
Washington....	-	-	98,318	91,495	215,815	146,511
Total.....	440	40,325	1,048,075	959,470	755,538	726,762
U.S. Total.....	7,198,422	8,030,862	15,343,608	14,315,784	7,863,534	8,050,140

Pentanes Plus 1989	Pentanes Plus 1988	Total 1989	Total 1988	District & State
				PAD Dist. I
				New England
-	W	68,467	67,279	...Connecticut
-	-	67,986	68,253	.....Maine
W	W	111,391	101,017	.Massachusetts
-	-	109,589	90,831	.New Hampshire
-	-	21,631	23,842	..Rhode Island
-	-	66,693	50,353	.....Vermont
				Central Atlantic
-	-	48,515	50,564	.....Delaware
-	-	93,973	72,979	.Maryland/D.C.
W	W	226,305	290,798	....New Jersey
W	W	245,992	227,064	.....New York
W	W	330,078	364,568	..Pennsylvania
				Lower Atlantic
-	W	351,819	360,978	.....Florida
W	W	328,135	292,872	.....Georgia
W	W	414,242	341,994	North Carolina
W	W	162,281	152,863	South Carolina
W	-	198,256	185,097	.....Virginia
W	W	56,071	44,516	.West Virginia
6,024	22,647	2,901,424	2,785,868	.....Total
				PAD Dist. II
50,709	34,395	1,054,458	2,397,539	.....Illinois
59,107	54,073	580,708	538,738	.....Indiana
W	W	431,364	426,111	.....Iowa
592,805	746,139	1,713,154	1,984,435	.....Kansas
9,520	10,216	384,740	445,947	.....Kentucky
27,123	W	1,022,392	1,011,151	.....Michigan
W	W	365,027	360,134	.....Minnesota
W	W	473,720	411,175	.....Missouri
W	W	215,573	225,990	.....Nebraska
W	6,371	122,695	127,206	..North Dakota
W	W	797,592	659,111	.....Ohio
39,983	44,040	444,878	413,113	.....Oklahoma
-	-	217,858	101,005	..South Dakota
W	W	199,315	187,883	.....Tennessee
W	W	409,700	374,400	.....Wisconsin
787,954	922,081	8,433,174	9,663,938	.....Total
				PAD Dist. III
W	1,571	268,498	213,210	.....Alabama
W	W	205,420	166,116	.....Arkansas
786,470	986,162	3,770,934	4,272,948	.....Louisiana
320,608	194,357	609,523	425,147	...Mississippi
77,538	41,070	379,294	126,117	....New Mexico
2,530,944	2,402,823	15,959,917	15,094,141	.....Texas
3,717,724	3,626,483	21,193,586	20,297,679	.....Total
				PAD Dist. IV
W	3,924	160,249	120,261	.....Colorado
-	-	33,932	30,689	.....Idaho
W	2,282	132,728	124,454	.....Montana
42,940	35,803	171,176	146,479	.....Utah
27,245	19,342	158,073	133,423	.....Wyoming
71,129	61,351	656,158	555,306	.....Total
				PAD Dist. V
W	W	11,704	12,112	.....Alaska
W	W	82,574	85,500	.....Arizona
99,275	175,285	1,344,276	1,443,745	....California
-	-	7,784	7,999	.....Hawaii
W	W	75,588	48,179	.....Nevada
-	-	67,427	66,488	.....Oregon
W	-	314,155	238,006	....Washington
99,455	175,472	1,903,508	1,902,029	.....Total
4,682,286	4,808,034	35,087,850	35,204,820	.....U.S. Total